

III. CLAIMS

1. (Cancelled)
2. (Previously Presented) A radio apparatus (50) comprising a diversity receiver which has
 - a first reception branch (12; 40) and a second reception branch (13; 41),
 - a RAKE receiver (14) comprising correlator branches (14a, 14b, 14c, 14d) for combining received signal components on baseband frequency,
 - a measuring receiver (14e; 16) for making measurements, characterized in that the radio apparatus is arranged so as to tune the first reception branch (12; 40) to a different frequency than the second reception branch (13; 41) and to make measurements of a signal produced by one reception branch simultaneously with the reception of a signal produced by the other reception branch,
 - a reception branch having a switch (15; 31) which has at least two states (15a, 15b), in the first state the switch is arranged so as to direct the signal received by said reception branch having the switch to said RAKE receiver (14), and in the second state switch is arranged so as to direct the signal received by said reception branch having the switch to said measuring receiver (14e; 16).

3. (Previously Presented) The radio apparatus of claim 2, characterized in that said reception branch having the switch comprises, successively in the direction of the flow of the received signal:

an RF filter and amplifier (26),

a first mixer (27) for IF conversion,

an IF filter, and

a second mixer (28) for baseband conversion,

so that said switch (15) is located after said second mixer in the direction of the flow of the received signal.

4. (Previously Presented) The radio apparatus of claim 2, characterized in that said reception branch having the switch comprises:

an RF filter and amplifier (26),

a first mixer (32) for IF conversion,

a first IF filter (34),

a second mixer (34) for baseband conversion,

a third mixer (33) for IF conversion,

a second IF filter (35), and

a fourth mixer (35) for baseband conversion,

so that said switch (31) is located between said RF filter and amplifier (26) on the one hand and said first mixer (32) and third mixer (33) on the other, and it is arranged so as to

in the first state to conduct a signal from said RF filter and amplifier (26) via said first mixer (32), first IF filter (34) and second mixer (34) to said RAKE receiver (14) and

in the second state to conduct a signal from said RF filter and amplifier (26) via said third mixer (33), second IF filter (35) and fourth mixer (35) to said measuring receiver (16).

5. (Previously Presented) The radio apparatus of claim 2, characterized in that the radio apparatus comprises an oscillator (44, 45) for the first reception branch and the second reception branch (40, 41) to produce the IF mixing frequency needed for the tuning of the reception branch.

6. (Previously Presented) The radio apparatus of claim 2, characterized in that the radio apparatus comprises a common oscillator (46) to produce the IF mixing frequencies needed for tuning all the reception branches as well as frequency conversion means (47, 48) to convert in each reception branch the frequency produced by said common oscillator to an IF mixing frequency suitable for tuning.

7. (Previously Presented) The radio apparatus of claim 2, characterized in that said RAKE receiver comprises a measuring block (14e) for measuring the impulse response of received signals, and said measuring block can be repeatedly set so as to measure alternatively the signal produced by the first reception branch or the signal produced by the second reception branch.

8. (Previously Presented) A method for making frequency specific measurements in a diversity receiver which comprises at least two reception branches and which receives at a certain operating frequency, the method to make measurements at other than the operating frequency comprising:

tuning at least one reception branch to other than the operating frequency; and

directing the signal received by the at least one reception branch to a measuring receiver, characterized in that the tuning of at least one branch of the diversity receiver to other than the operating frequency is timed according to a certain predetermined timetable which is known to a transmitter apparatus transmitting at the operating frequency.

9. (Previously Presented) The method of claim 8, characterized in that the transmitter apparatus transmitting at the operating frequency is also requested (62) to transmit at a higher power during the time that at least one branch of the diversity receiver is tuned to other than the operating frequency.

10. (Previously Presented) The method of claim 9, characterized in that a request for transmitting at a higher power is transmitted to said transmitter apparatus at a moment of time which is earlier by a certain delay length than the commencement of making the measurements at other than the operating frequency, said delay length corresponding to the previously estimated delay between a transmitted request for changing transmission power and the arrival at the receiver of the first transmission with the transmission power changed as per the request.

11. (Previously Presented) The method of claim 9, characterized in that a request for transmitting at a lower power is transmitted to said transmitter apparatus at a moment of time which is earlier by a certain delay length than the end of making the measurements at other than the operating frequency, said delay length corresponding to the previously estimated delay between a transmitted request for changing transmission power and the arrival at the receiver of the first transmission with the transmission power changed as per the request.

12. (Previously Presented) The method of claim 8, characterized in that said transmitter apparatus has various timetables concerning various terminals or groups of terminals.

13. (Previously Presented) The method of claim 8, characterized in that bit errors that occur in the reception while at least one branch of the diversity receiver is tuned to other than the operating frequency are corrected using interleaving in the signal received at the operating frequency.

14. (Previously Presented) The method of claim 8, characterized in that the tuning of at least one branch of the diversity receiver to other than the operating frequency is timed according to a timetable determined by the diversity receiver, an interval in the timetable between consecutive tunings of at least one branch of the diversity receiver to other than the operating frequency being inversely proportional to a relative received power, and proportional to the received power at the operating frequency, on some or several other carriers.

15. (Previously Presented) A method for making frequency specific measurements in a diversity receiver which comprises at least two reception branches one of the two reception branches having a switch that has at least two states and a RAKE receiver including correlator branches and which receives radio signals at a certain operating frequency, characterized in that:

to make measurements at other than the operating frequency, an impulse response measurement at the operating frequency carried out by a measuring block in the RAKE receiver is interrupted; and

said measuring block is set to carry out a measurement at other than the operating frequency;

directing, when the switch is in a first state, a signal received by the reception branch having the switch to the RAKE receiver; and

directing, when the switch is in a second state, the signal received by the reception branch having the switch to a measuring receiver.

16. (Previously Presented) A communications system (70) comprising base stations (71, 72) and terminals (76) of which at least one comprises a diversity receiver (77) which has at least two reception branches and a RAKE receiver including correlator branches to combine signals received by the different reception branches and which also has a measuring receiver to make measurements, characterized in that at least one terminal is arranged so as to tune a first reception branch (12; 40) to other frequencies than a second reception branch (13; 41) and to make measurements of both the signal produced by the first reception branch and the signal produced by the second reception branch, and the tuning of said first reception branch to other frequencies is timed according to a certain predetermined timetable which is known to at least one base station.

17. (New) A radio apparatus comprising a diversity receiver which has:

means for processing received signals in a first reception branch and a second reception branch;

a RAKE receiver comprising correlator branches and means for combining received signal components on baseband frequency;

measuring receiver means for making measurements;

means for tuning the first reception branch to a different frequency than the second reception branch and for making

measurements of a signal produced by one reception branch simultaneously with the reception of a signal produced by the other reception branch; and

in at least one reception branch switching means for directing the signal received by said reception branch having the switch alternatively to said RAKE receiver or to said measuring receiver.

18. (New) A communications system comprising base stations and terminals of which at least one comprises a diversity receiver which has means for processing received signals in at least two reception branches and a RAKE receiver including correlator branches for combining signals received by the different reception branches and which also has measuring receiver means for making measurements, wherein at least one terminal comprises means for tuning a first reception branch to other frequencies than a second reception branch and means for making measurements of both the signal produced by the first reception branch and the signal produced by the second reception branch, and means for timing the tuning of said first reception branch to other frequencies according to a certain predetermined timetable which is known to at least one base station.